SIMTEK5667

IN THE UNITED STATES PATENT OFFICE

In re Application of
Masaki Morimatsu et al

App. No.: 09/723016
Filed: 11/27/2000
Conf. No.: 5642
Title: COMPONENT OF A ROTATING ELECTRICAL MACHINE
Examiner: K. Addison
Art Unit: 2834

I hereby certify that this correspondence and all marked attachments are being deposited with the United States Patent Office via fax to (703) 872-9319 on:
January 10, 2005
Ernest A. Beutler
Reg. No. 19901

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

APPELLANT'S BRIEF

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that would have a bearing on or be affected by the decision in this appeal.

REAL PARTY IN INTEREST

In addition to the appellant, the real party in interest is his assignee, Kabushiki Kaisha Moric, a Japanese company.

STATUS OF CLAIMS

Claims 1 through 16 remain in this application. In the Examiner's Summary she has indicated that claims 6-9 and 11-18 are allowed. However she has also indicated there that claims 1-5 and 8-10 are rejected. The body of the rejection only claims 1-5 and 10 are rejected thus are before the Board on appeal. A clean copy of these claims appears in the Appendix to this Brief.

STATUS OF AMENDMENTS

This case had been appealed previously and in response to Appellants' first Appeal Brief the Examiner reopened prosecution and subsequently issued the second Final Rejection herein appealed. No other response to the Final Rejection was filed so the claims before the Board are as finally rejected.

APPELLANT'S INVENTION

Appellant's invention relates to an improved bobbin and coil winding arrangement for a rotating electrical machine such as an electric motor or generator. Specifically the invention is directed to an improved construction for the bobbin arrangement around which the coils are wound that includes integral terminal connections for the ends of the coils to facilitate the connection between them and the external electrical connections. In the case of an electric motor, the external connection is to an electrical power source. In the case of a generator, the external connection is to a circuit for receiving and controlling the electrical output of the machine.

As is noted in the specification of this case, these connections are normally made by soldered connections between the external terminal ends and the core coil winding ends. These connections are frequently bunched between the adjacent coils and thus, limit the available space and tend to make the machine larger than necessary. In addition, the formation of these soldered joints requires considerable labor and time and adds significantly to the expense of the machine. In addition, the use of the separate soldered connections also raises the possibility of poor connections or connections that can become easily broken. Furthermore, it is necessary to provide the external connection wires to be fastened to the core by some external fastening means such as screws or the like. These prior art arrangements also do not permit flexibility in the manner in which the coils are connected so that the machine design can not be easily changed to suit different applications.

In accordance with the invention, the insulating bobbin around which the coils are wound is formed with an integral terminal portion spaced radially from the coil windings and which carry a plurality of wiring conductors. Each of these wiring conductors having one terminal end connected at least one of the coil ends and another terminal end connected to one external electrical connector through the terminal portion to eliminate the need for a soldered joint therebetween.

The invention is described in full detail by reference to the figures in the appropriately headed portion of the specification.

ISSUES BEFORE THE BOARD

The issue before the Board is whether the Examiner has made out a prima facia case that the subject matter of each of finally rejected claims 1-5 and 10 is anticipated under 35 USC 102(b) by Japanese Published Application JP07-163077 (Makoto)?

GROUPING OF CLAIMS

Only claims 1-3 stand or fall together. The patentability of this group and the remaining claims is argued separately.

APPELLANT'S ARGUMENTS

ARE EACH OF CLAIMS 1-5 AND 10 ANTICIPATED BY MAKOTO

Obviously to determine the answer to this question the Board need only look to see if each limitation of each rejected claim is shown in the reference the Examiner refers to as "Makoto" is present. It should be noted that in the previous Final Rejection previously briefed this reference was referred to as "Arai" and was only applied against claims 10 and 15-18. It was used for its alleged showing of a "terminal hole and connector block". Thus it is surprising that it is now applied as a complete anticipation of the claimed structure.

To assist the Board in its determination, each appealed claim is reproduced below with the distinguishing portions underlined except for claims 2 and 3 which, as noted above, stand or fall with claim 1.

1. A component of a rotating machine comprised of a plurality of coils each wound on the pole teeth of a core through a bobbin, said bobbin having portions surrounding said pole teeth of said core for receiving coil windings and an integral terminal portion spaced radially from the coil windings, a plurality of wiring conductors integrally carried by said bobbin coil winding receiving portions, each of said wiring conductors having one terminal end connected at least one of said coil ends and another terminal end exposed within said terminal portion for connection to one external electrical connector through said terminal portion.

4. A component of a rotating machine as set forth in claim 3 wherein the other terminal end of all of the conductors are carried by one of the mating bobbin halves.

5. A component of a rotating machine as set forth in claim 4 wherein the one of the mating bobbin halves is molded with the conductor other terminal ends molded into the one mating bobbin half.

10. A component of a rotating machine as set forth in claim 1 the bobbin is formed, integrally, with a plurality of internal wiring connectors each being formed with a terminal hole into which is led a coil end and with terminal hole into which is led one end of the wiring conductors, and further including a connecting block to be inserted in both of said terminal holes and provided with a connection circuit for connecting said coil ends and said wiring conductors.

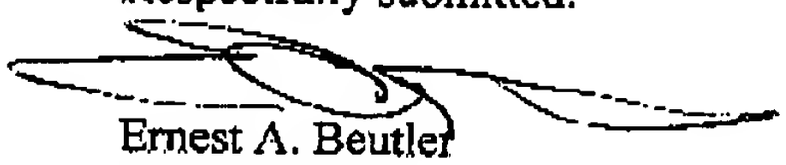
From the foregoing it should be readily apparent that unlike appellants formation of conductors molded into one of the bobbin halves, the reference relied on by the Examiner, whatever name is applied to it, utilizes separate pieces shown best in FIG. 2 that extend through the armature core and which carry metal rings to which the coil ends must be individually attached, presumably by welding. The fact that these pieces are separate from and attached mechanically to the bobbin halves is readily apparent from FIG. 1 as is the fact that the connecting pieces 31 that receive the wire ends are also separately attached pieces. The Board is most respectfully requested to compare this complicated and labor intensive structure with the simple arrangement shown in appellants' FIG. 1.

The invention may appear simple in retrospect, but this is generally true of many inventions that are elegant in their simplicity.

It is submitted that the Examiner has not made out a prima facia case and should be reversed. The Board is respectfully requested to take such action.

Since appellants have already paid one brief fee, it is assumed that no further fee is required for this Brief.

Respectfully submitted:



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APPENDIX
CLEAN COPY OF CLAIMS ON APPEAL

1. A component of a rotating machine comprised of a plurality of coils each wound on the pole teeth of a core through a bobbin, said bobbin having portions surrounding said pole teeth of said core for receiving coil windings and an integral terminal portion spaced radially from the coil windings, a plurality of wiring conductors integrally carried by said bobbin coil winding receiving portions, each of said wiring conductors having one terminal end connected at least one of said coil ends and another terminal end exposed within said terminal portion for connection to one external electrical connector through said terminal portion.

2. A component of a rotating machine as set forth in claim 1 wherein the bobbin is comprised of mating halves.

3. A component of a rotating machine as set forth in claim 2 wherein the bobbin mating halves encircle the pole teeth.

4. A component of a rotating machine as set forth in claim 3 wherein the other terminal end of all of the conductors are carried by one of the mating bobbin halves.

5. A component of a rotating machine as set forth in claim 4 wherein the one of the mating bobbin halves is molded with the conductor other terminal ends molded into the one mating bobbin half.

10. A component of a rotating machine as set forth in claim 1 the bobbin is formed, integrally, with a plurality of internal wiring connectors each being formed with a terminal hole into which is led a coil end and with terminal hole into which is led one end of the wiring conductors, and further including a connecting block to be inserted in both of said terminal holes and provided with a connection circuit for connecting said coil ends and said wiring conductors.